

QUESTIONS AND ANSWERS

PLEASE REFER TO THE GENERAL FAQs SECTION OF ARPA-E'S WEBSITE ([HTTP://ARPA-E.ENERGY.GOV/?Q=FAQ/GENERAL-QUESTIONS](http://arpa-e.energy.gov/?q=faq/general-questions)) FOR ANSWERS TO MANY GENERAL QUESTIONS ABOUT ARPA-E AND ARPA-E'S FUNDING OPPORTUNITY ANNOUNCEMENTS. ADDITIONAL QUESTIONS SPECIFIC TO THIS FOA ONLY ARE INCLUDED BELOW. PLEASE REVIEW ALL EXISTING GENERAL FAQs AND FOA-SPECIFIC QUESTIONS BEFORE SUBMITTING NEW QUESTIONS TO ARPA-E.

I. Concept Paper Phase Questions:

Q1. It is clearly stated that natural gas (CH₄) is the specific fuel, and that a >70% efficiency is expected on a fuel LHV-basis. However, the nominal hybrid system described on pages 15-17 of the FOA (and figures 7 and 8) establishes an ideal system efficiency of ~94% on an H₂-LHV basis per note 31. The language in this section suggests that the target efficiency of the hybrid system is benchmarked against H₂ LHV or heat of reaction. Please clarify if the efficiency determinations should be based on the lower heating value of CH₄ or H₂ input.

ANSWER: The ARPA-E INTEGRATE Program seeks to develop natural gas-fueled distributed electric generation systems that offer fuel to electric power conversion efficiencies in excess of 70% based on Lower Heating Value (LHV) of natural gas. The purpose of the discussion on Page 16 and Figure 8 was only to present an ideal notional fuel cell engine hybrid system as an example. Please also refer to Section III.C.3 (Submissions Specifically Not of Interest) of the INTEGRATE FOA. According to Section III.C.3, submissions that propose systems powered by fuels other than natural gas may be deemed nonresponsive and may not be merit reviewed or considered.

Q2. We are interested in responding to the INTEGRATE FOA (DE-FOA-0001797), but I would like to clarify some details about Phases I and II of the program. Are applicants allowed to propose Phase I projects and then propose Phase II projects at a later time during or after the completion of Phase I?

It is clearly stated in the FOA that combined Phase I and II projects need to be proposed at this time, but our team feels that it would be fruitful to have completed Phase I first before we propose Phase II.

ANSWER: Please refer Section I.E. (Program Structure) of the INTEGRATE FOA. Section I.E. of the FOA states that Concept Paper applicants may provide budgets and task descriptions that cover either only Phase I or both Phase I and Phase II.

Q3. Are you willing to consider advanced thermionic conversion systems for this FOA?

ANSWER: Please refer to Section III.C.3 of the INTEGRATE FOA (Submissions Specifically Not of Interest). As stated in Section III.C.3, submissions that propose "systems not incorporating a fuel cell as one of the sub-systems" may be deemed nonresponsive and may not be merit reviewed or considered.

QUESTIONS AND ANSWERS

Q4. On p. 1 of the FOA, in the table of "Required Documents Checklist", it says that FOA modification regarding full applications will be inserted in November 2018. Is there a typo there? Should that be "November 2017"?

ANSWER: The November 2018 reference is a typographical error which ARPA-E will correct in a future update to the Funding Opportunity Announcement. It should have read "November 2017."

Q5. Is it mandatory to build a 100 kW system at the end of Phase II period? Would you consider a technology that can be scaled up, but at the scale of 5 kW with a total conversion efficiency > 70% for the production of electricity (or even 80%)?

ANSWER: The ARPA-E INTEGRATE Program seeks to encourage the development of distributed generation systems of ≥ 100 kW that have electric efficiencies in excess of 70% on a lower heating value basis and an installed cost to the end user of less than \$1.8/W. Applicants may choose to propose a system that is less than 100 kW for Phase II demonstration but a technical pathway to meet the efficiency and cost targets at a scale of 100 kW must also be included.

II. Full Application Phase Questions:

Q6. After reviewing the latest modification to the FOA, I have a question on Phase II activities. Do we need to have detailed budgets (i.e.: material quotes) for Phase II scope for the full proposal? Or is an estimate sufficient at this time?

ANSWER: Refer to ARPA-E's *Budget Justification/ SF-424A Workbook Guidance*, found at <https://arpa-e-foa.energy.gov/FileContent.aspx?FileID=68e16f5c-d202-49dc-93cc-d3b3fc2f1c00>, for guidance on preparing and supporting budgets submitted under this FOA. Also, see the General FAQs section of ARPA-E's website, Question Category 10, for additional information.

Q7. I would like to include letters of support or collaboration from key industry stakeholders that are supporting our proposal (but not budgeted or key investigators). Can you please clarify how this type of support should be indicated in the Full Proposal? If not as letters, how should they be included.

ANSWER: See the response to question 8.3 in the ARPA-E FAQ General Questions which is located on the ARPA-E website <http://ARPA-E.energy.gov> FAQ page.

Q8. The ARPA-E budget justification workbook only includes space for 8 tasks. Can more tasks space be added to the budget justification workbook?

ANSWER: ARPA-E updated the Budget Justification template with a version that has more than eight Tasks. The document is located in the Required Documents section of the DE-FOA-0001797 INTEGRATE funding opportunity announcement on the ARPA-E Funding Opportunity Exchange website <http://ARPA-E-FOA.energy.gov>.

QUESTIONS AND ANSWERS

Q9. The technical volume template for the title page for the INTEGRATE FOA full application has a line with the words "TECHNICAL CATEGORY" What information should go on this line? I can find no description of different technical categories in the FOA.

ANSWER: Prospective Applicants may disregard this text. ARPA-E will publish a revised technical volume template shortly.

Q10a. I'm assisting with a Field Work Proposal as a sub-recipient on the above referenced ARPA-E INTEGRATE FOA, and I just needed to verify whom I should list as the DOE/HQ Program Manager/Director and which B&R this would be funded under.

Q10b. I am working on the ARPA-E application and I was wondering who the DOE HQ Program Manager/Director for this proposal is?

ANSWER: Dr. David Tew, Program Director, ARPA-E

Q11. In accordance with Funding Opportunity No. DE-FOA-0001797, Mod 02, Cover Page "Anticipated Awards" it states that the total project budget (including cost share) is \$10 million. Based on this, does it mean that the Federal funding is limited to \$8 million and the cost share of 20% is \$2 million for a total Federal and cost share of \$10 million, or is the total federal funding \$10 million?

ANSWER: Per the cover sheet table "Anticipated Awards" section:

*ARPA-E may issue one, multiple, or no awards under this FOA. Awards may vary between \$250,000 and \$4 million for Phase I. Combined Phase I and II awards are limited to a total project budget (**including cost share**) of \$10 million.*